Agent Name: Scott É. Scioli Sheet 1 of 10 Ph. No.: 215-557-5986

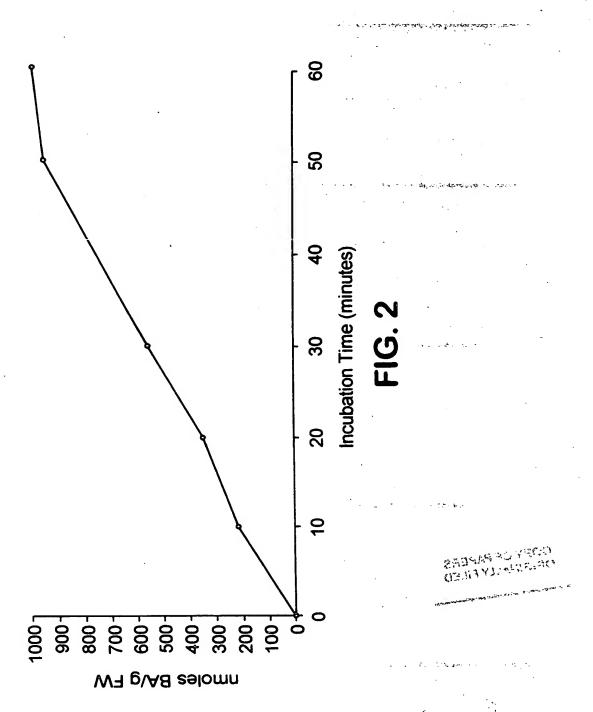
1/10 4-Hydroxy-3-methoxybenzyl OCH alcohol 3,4-Dihydroxybenzaldehyde Vanillin ÓН Ю 3,4-Dihydroxybenzyl Ю alcohol p-Hydroxybenzyl alcohol СН2ОН in Green Vanilla beans p-Hydroxybenzoic acid p-Coumaric acid p-Hydroxybenzyl aldehyde OH 4HBS H00C Shikimic Acid Pathway L-Phenylalanine L-Tyrosine

Docket No.: DMCI-0099 — Senal No.: 1998-114 Inventors: Daphna Havkin-Frenkel, et al. 1998-114 Title: Vanillin Biosynthetic Pathway Enzyme from Vanil

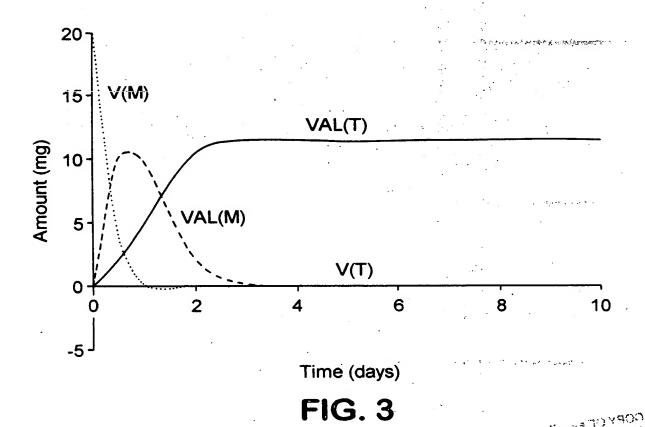
Ph. No.: 215-557-5986

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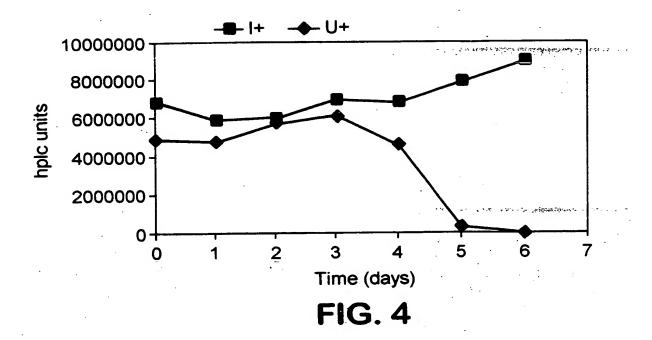


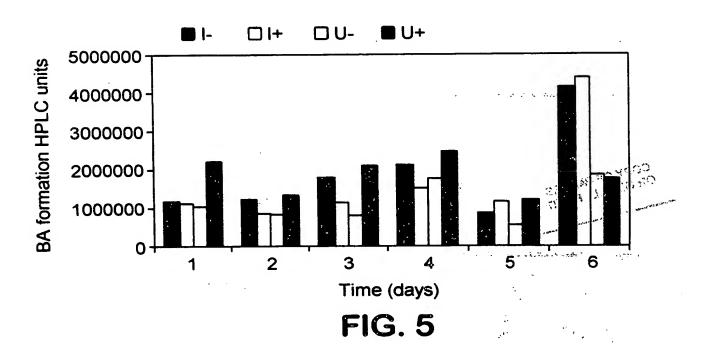
Agent Name: Scott E. Scioli Sheet 3 of 10 Ph. No.: 215-557-5986



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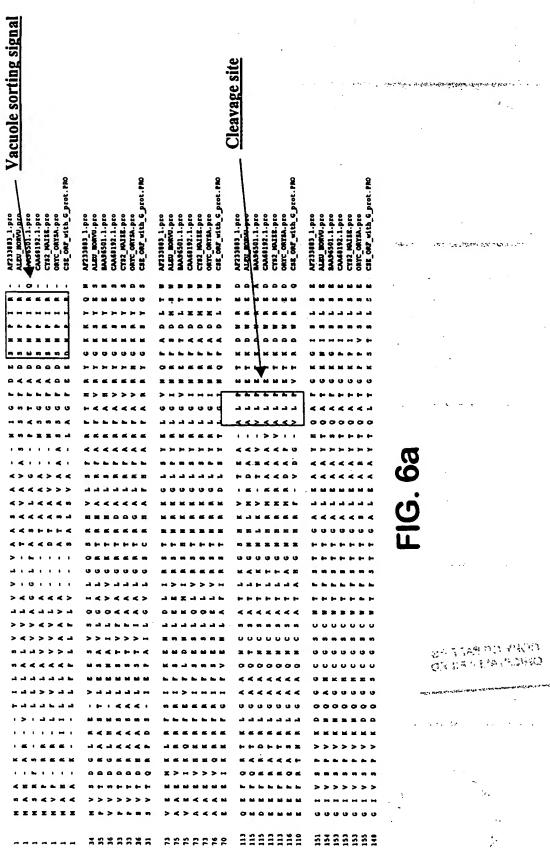
Ph. No.: 215-557-5986





Agent Name: Scott E. Scioli Sheet 5 of 10

Ph. No.: 215-557-5986



Mdbrfat oflete Inventors: Daphna Havkin-Frenkel, et al Title:Vanillin Biosynthetic Pathway Enzyme from Vanilla lanifolia Agent Name: Scott E. Scioli Sheet 6 of 10 6/10 His active site Vanilla Cysteine Protease

(with solid deep red) residues that match the Consensus exactly.

VCysProt

351 353 353 353 346

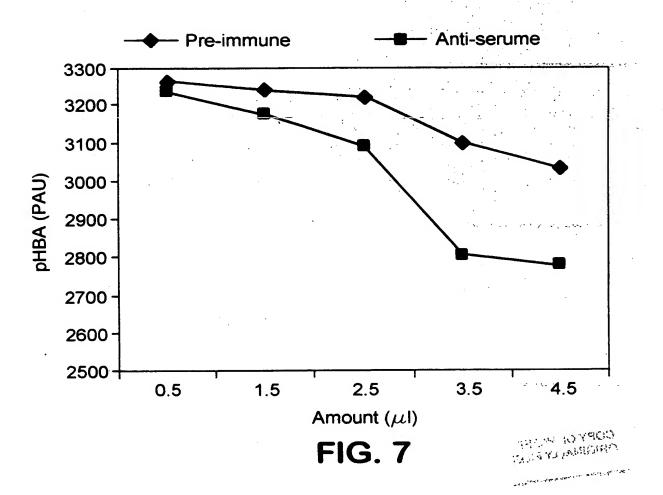
271 274 273 273 275 268

Cys active site

Asn active site

itle:Vanillin Biosynthetic Pathway Enzyme from Vanilla nnifolia

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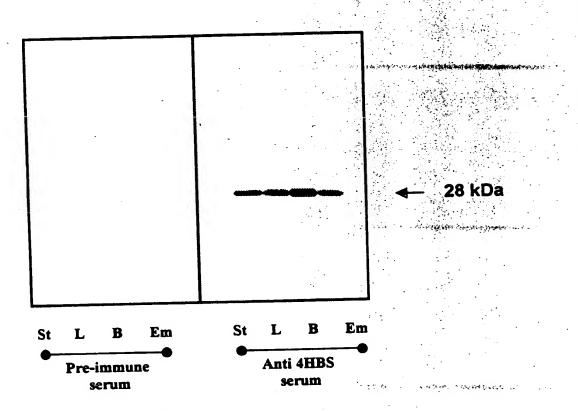


FIG. 8

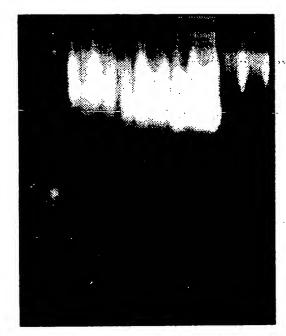
Agent Name: Scott E. Scioli Sheet 9 of 10

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9/10

Protease -142 kD -Collagenase Type III

Protease -.37 kDa -Chymotrypsin



St L \mathbf{B} Em

FIG. 9

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